

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN FRANCISCO BAY REGION

ORDER NO. 88-018

NPDES PERMIT NO. CA0038644

REISSUING WASTE DISCHARGE REQUIREMENTS FOR:

NAPA RIVER RECLAMATION DISTRICT  
EDGERLY ISLAND, NAPA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter called the Board) finds that:

1. The Napa River Reclamation District (formerly Edgerly Island Reclamation District), hereinafter called the discharger, submitted a report of waste discharge dated December 15, 1987, for reissuance of NPDES Permit No. CA0037966.
2. The Discharger presently operates a sewage collection and treatment system to serve an area which had numerous problems in the past with individual on-site wastewater disposal systems. Treatment is provided by a mound percolation system followed by chlorination and three storage ponds covering an area of approximately 9.5 acres. The ultimate flow to the system will be approximately 40,000 gallons per day (gpd) during the peak month from 157 homes. Subsequent to the mound percolation system, treated wastewater is recirculated among the three ponds. Discharge structure are installed in ponds 1 and 2 only. Pond 3 has a man-made island for enhancing wild life habitat.
3. Between December 1 and April 30 of each year the Discharger proposes to discharge approximately 82,000 gpd (maximum 7 day average) of effluent and rainwater from the holding ponds to drainage channels within a marsh restoration project to be operated by California Department of Fish and Game. This marsh drains to Mud Slough and thence to the Napa River, waters of the State and United States. This discharge has not commenced yet because of the storage capacity provided in the ponds.
4. The discharge is presently governed by Waste Discharge Requirements Order No. 83-6, adopted by the Board on February 16, 1983, which allow discharge of pond effluent to the Mud Slough during the period of December 1 through April 30.
5. The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) on December 17, 1986. The Basin Plan contains water quality objectives for the Napa River and contiguous waters.
6. The beneficial uses of the Napa River in the vicinity of the discharge as contained in the Basin Plan are:
  - a. Navigation.

- b. Water contact recreation.
  - c. Non-contact water recreation.
  - d. Warm fresh water habitat.
  - e. Cold fresh water habitat.
  - f. Wild life habitat.
  - g. Preservation of rare and endangered species.
  - h. Fish migration.
  - i. Fish spawning.
7. The proposed discharge will not consistently receive a minimum initial dilution of 10:1, and will be made to the Mud Slough, a confined water body, in the tidal reach of the Napa River. This Board's Basin Plan prohibits such discharges, but provides for exceptions in cases where an inordinate burden would be placed on the discharger relative to the beneficial uses protected, and where an equivalent level of protection can be achieved by alternative means. The Board hereby finds that these criteria have been met for the proposed discharge based on the following:
- a. The project's alleviating of a severe public health problem from failing septic systems through proper wastewater collection and treatment;
  - b. The exceptional cost of a pipeline to export this small flow approximately eleven miles to the San Francisco Bay;
  - c. The protection to beneficial uses afforded by:
    - 1. Limitation of the flow to wet weather months when average dilution is in excess of 100:1,
    - 2. The high degree of reliability anticipated from the proposed treatment system.
8. An Operation and Maintenance Manual is maintained by the Discharger for purposes of providing plant and regulatory personnel with a source of information describing all equipment, facilities, and recommended operating strategies, and maintenance activities. In order to remain a useful and relevant document, this manual should be kept updated to reflect significant changes in plant facilities or activities.
9. This Order serves as an NPDES permit, adoption of which is exempt from the provisions of Chapter 3 (commencing with Section 21100) of Division 13 of the Public Resources Code (CEQA) pursuant to Section 13389 of the California Water Code.
10. The Discharger and interested agencies and persons have been notified of the Board's intent to reissue requirements for the existing discharge and have been provided with the opportunity for a public hearing and the opportunity to submit their written views and recommendations.
11. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, that the Discharger in order to meet the provisions contained in Division 7 of the California Water code and regulations adopted thereunder and the provisions of the Clean Water Act as amended and regulations and guidelines adopted thereunder shall comply with the following:

A. Prohibitions

1. Discharge from the holding ponds to waters of the State is prohibited from May 1 through November 30 of each year.
2. Discharge from the holding ponds at any location other than the designated pond effluent structure is prohibited.
3. Bypass or overflow of untreated or partially treated wastewater to waters of the United States, from either the treatment plant or the collection system is prohibited.
4. The average dry weather daily flow to the treatment plant shall not exceed 40,000 gallons per day (monthly average).

B. Effluent Limitations

1. The waste shall meet the following limits of water quality at some point in the treatment process prior to its discharge to the marsh restoration project area.

<u>Constituents</u>	<u>Units</u>	<u>Monthly Average</u>	<u>Weekly Average</u>	<u>Daily Maximum</u>	<u>Instantaneous Maximum</u>
a. Biochemical Oxygen Demand (BOD)	mg/l	30	45	60	-
b. Suspended Solids	mg/l	30	45	60	-
c. Oil & Grease	mg/l	10		20	-
d. Settleable Solids	ml/l-hr	0.1		0.2	
e. Chlorine Residual	mg/l				0.0

2. The total coliform bacteria for a median of five consecutive samples of effluent shall not exceed a most probable number (MPN) of 240 per 100 ml. Any single sample shall not exceed a MPN of 10,000 total coliform bacteria per 100 ml when verified by a repeat sample taken within 48 hours.
3. The pH of the discharge shall not be less than 6.0 nor greater than 9.0.
4. The survival of test organisms acceptable to the Executive Officer in 96-hour bioassays of the effluent shall achieve a median of 90% survival for three consecutive samples and a 90

percentile value of not less than 70% survival for 10 most recent consecutive samples.

5. The arithmetic mean of the biochemical oxygen demand (5 day, 20°C) and suspended solids values, by weight, for effluent samples collected in any month shall not exceed 15 percent of the arithmetic mean of the respective values, by weight, for influent samples collected approximately the same time during the same period (85 percent removal).

C. Pond Requirements

1. Treated wastewater, as contained in holding ponds one and two shall meet the following limits at any place within one foot of the surface:

In any grab sample:

Dissolved Oxygen	2.0 mg/l minimum
Dissolved Sulfide	0.1 mg/l maximum
pH	6.0 minimum
	9.0 maximum

2. Treated wastewater as contained in holding pond three shall not exceed the following limits at any place within one foot of the surface.

- a. Dissolved Oxygen      5.0 mg/l minimum. Median of any three consecutive months shall not be less than 80% saturation.  
(When natural factors cause lesser concentration(s) than those specified above to occur in pond three, then the discharge to pond three shall not cause further reduction in the concentration of dissolved oxygen.)
- b. Dissolved Sulfide      0.1 mg/l maximum.
- c. pH      Not to exceed 9.0 nor be less than 6.0.  
(If natural factors cause the above limits to be exceeded, variation from natural ambient pH shall not be more than 0.5 pH units.)
- d. Un-ionized Ammonia      0.025 mg/l annual median  
as N      0.4 mg/l maximum

3. The following conditions shall not exist in pond three at any place.

- a. Floating, suspended, or deposited macroscopic particulate matter or foam;

- b. Bottom deposits or deleterious aquatic growths:
  - c. Visible, floating, suspended, or deposited oil or other products of petroleum origin;
  - d. Toxic or other deleterious substances to be presented in concentrations or quantities which will cause deleterious effects on aquatic biota, wildlife, or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentration.
4. A minimum of 18 inches of freeboard shall be maintained in the ponds at all times.

D. Receiving Water Limitations

- 1. The discharge of waste shall not cause the following conditions to exist in waters of the United States at any place:
  - a. Floating, suspended, or deposited macroscopic particulate matter or foam;
  - b. Bottom deposits or deleterious aquatic growths;
  - c. Alteration of temperature, turbidity, or apparent color beyond present natural background levels;
  - d. Visible, floating, suspended, or deposited oil or other products of petroleum origin;
  - e. Toxic or other deleterious substances to be presented in concentrations or quantities which will cause deleterious effects on aquatic biota, wildlife, or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentration.
- 2. The discharge of waste shall not cause the following limits to be exceeded in waters of the United States in any place within one foot of the water surface:
  - a. Dissolved oxygen                      5.0 mg/l minimum. Median of any three consecutive months shall not be less than 80% saturation.  
(When natural factors cause lesser concentration(s) than those specified above, then this discharge shall not cause further reduction in the concentration of dissolved oxygen.)
  - b. Dissolved Sulfide                      0.1 mg/l maximum.
  - c. pH    Variation from natural ambient pH by more than 0.5 pH units.

- d. Un-ionized Ammonia      0.025 mg/l as N, annual median.  
   0.4 mg/l as N, maximum.
- e. Nutrients      Waters shall not contain  
   biostimulatory substances in  
   concentrations that promote aquatic  
   growths to the extent that such  
   growths cause nuisance or adversely  
   affect beneficial uses.

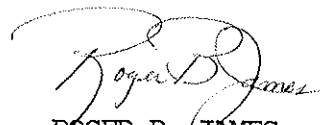
3. The discharge shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Board or the State Water Resources Control Board as required by the Clean Water Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Clean Water Act, or amendments thereto, the Board will revise and modify this Order in accordance with such more stringent standards.

E. Provisions

1. The treatment or disposal of waste shall not create a nuisance as defined in Section 13050(m) of the California Water Code.
2. Where concentration limitations in mg/l are contained in this permit, the following mass emission limitations shall also apply as follows:
- (Mass Emission Limit in lbs/day) = (Concentration Limit in mg/l)  
x (8.34) x (Actual Flow in MGD Averaged Over the Time Interval  
to which the Limit Applies).
3. The discharger shall comply with all sections of this Order immediately upon adoption.
4. The discharger shall review and update his Operation and Maintenance Manual annually, or in the event of significant facility or process changes, shortly after such changes have occurred. Annual revisions, or letters stating that no changes are needed, shall be submitted to the Regional Board by April 15 of each year.
5. The discharger shall review and update by April 15 annually its contingency plan as required by Board Resolution No. 74-10. The discharge of pollutants in violation of this Order where the discharger has failed to develop and/or implement a contingency plan will be basis for considering such discharge a willful and negligent violation of this Order pursuant to Section 13387 of the California Water Code.
6. The discharger shall comply with the self-monitoring program as adopted by the Board and as may be amended by the Executive Officer.

7. The discharger shall comply with all applicable items of the attached "Standard Provisions, Reporting Requirements and Definitions" dated December, 1986.
8. This Order expires on February 17, 1993. The discharger must file a report of waste discharge in accordance with Title 23, Chapter 3, Subchapter 9 of the California Administrative Code no later than 180 days in advance of such expiration date as application for issuance of new waste discharge requirements.
9. This Order shall serve as a National Pollutant Discharge Elimination System Permit pursuant to Section 402 of the Clean Water Act or amendments thereto, and shall become effective 10 days after date of its adoption provided the Regional Administrator, Environmental Protection Agency, has no objection. If the Regional Administrator objects to its issuance, the permit shall not become effective until such objection is withdrawn.
10. The requirements prescribed by this Order supersede the requirements prescribed by Order No. 83-6. Order No. 83-6 is hereby rescinded.

I, Roger B. James, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on February 17, 1988.

  
ROGER B. JAMES  
Executive Officer

Attachments:

Standard Provisions, Reporting  
Requirements and Definitions (dated December, 1986)  
Self-Monitoring Program  
Resolution 74-10

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN FRANCISCO BAY REGION

FINAL  
SELF-MONITORING PROGRAM  
FOR

NAPA RIVER RECLAMATION DISTRICT

EDGERLY ISLAND

NAPA COUNTY

NPDES NO. CA0038644

ORDER NO. 88-018

CONSISTS OF

PART A, dated 12/86

AND

PART B



PART B

NAPA RIVER RECLAMATION DISTRICT

I. DESCRIPTION OF SAMPLING STATIONS

A. INFLUENT

<u>Station</u>	<u>Description</u>
A-001	At any point in the treatment facilities headworks at which all waste tributary to the system is present and preceding any phase of treatment.

B. EFFLUENT

<u>Station</u>	<u>Description</u>
E-001	At any point in the outfall from the treatment facilities between the point of discharge and the point at which all waste tributary to that outfall is present.

C. MOUND PERCOLATION SYSTEM

<u>Station</u>	<u>Description</u>
G-1 thru G-10	At the ten existing monitoring wells located within each of the ten percolation beds.
M-1	At any point in between the disinfection facilities and the holding ponds at which all wastes collected from the mound percolation system are present and adequate contact with the disinfectant is assured.

D. HOLDING PONDS

<u>Station</u>	<u>Description</u>
P-1 thru P-3	Located at any point on the surface of holding ponds No. 1, 2, and 3, respectively, within one foot of the water surface, representative of the wastewater.

E. RECEIVING WATERS

<u>Station</u>	<u>Description</u>
C-1	At a point within the adjoining 45 acre tidal marsh restoration project area to be operated by the Department of Fish and Game. The appropriate location of this

sampling point will be decided by the Department of Fish and Game after the starting of normal discharges into the marsh.

F. LAND OBSERVATIONS

<u>Station</u>	<u>Description</u>
L-1 through L-'n'	Located along the perimeter levee of each holding pond at equidistant intervals not to exceed 100 feet. (A sketch showing the locations of these stations shall accompany each report.)
R-1 through R-'n'	Located along the periphery of the waste treatment facilities at equidistant intervals not to exceed 500 feet. (A sketch showing the locations of these stations shall accompany each report.)

G. OVERFLOWS AND BYPASSES

<u>Station</u>	<u>Description</u>
O-1 through O-'n'	Bypass or overflows from manholes, pump stations, or collection system. (Note: Initial report shall include map and description of each known bypass or overflow location.)
	<u>Reporting</u> - Initial report by phone for each bypass or overflow. Written report shall be included in the next monthly self-monitoring report with a description of the date, time, and period of each bypass or overflow.

II. SCHEDULE OF SAMPLING, ANALYSIS AND OBSERVATIONS

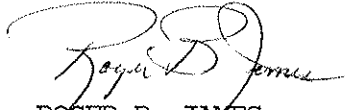
- A. The schedule of sampling, analysis and observations shall be that given in Table I.
- B. Effluent and receiving water samplings as described in paragraphs I.B and I.E, respectively, are required only during those discharging periods.

III. MODIFICATION OF PART "A" (dated 12/86)

This monitoring program does not include the following sections of Part "A": C-11, C-12, D-5, E-3, and G-4-e.

I, Roger B. James, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Regional Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Regional Board Order No. 88-018.
2. Is effective on the date shown below.
3. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the discharger, and revisions will be ordered by the Executive Officer.



ROGER B. JAMES  
Executive Officer

Effective Date: February 17, 1988

Attachments: Table I

TABLE 1  
SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

Sampling Station	A-1		E-1 <sup>(5)</sup>			All 'G'	M-1		All 'P'	C- <sup>(5)</sup>	All 'L'	All 'R'	All 'O'
TYPE OF SAMPLE	C-4	Cont	G	C-8	Cont	O	G	C-4	G	G	O	O	O
Flow Rate (mgd)		D			D								
BOD, 5-day, 20°C, or COD (mg/l & kg/day)	M			2W				M					
Chlorine Residual & Dosage (mg/l & kg/day)			2W				M						
Settleable Matter (ml/l-hr. & cu. ft./day)			2W				M						
Total Suspended Matter (mg/l & kg/day)	M			2W				M					
Oil and Grease (l) (mg/l & kg/day)				Q				Q					
Coliform (Total or Fecal) (MPN/100 ml) per req't			2W				M						
Fish Tox'y 96-hr. TL 50% Surv'l in undiluted waste				M <sup>(4)</sup>									
Ammonia Nitrogen (mg/l & kg/day)													
Nitrate Nitrogen (mg/l & kg/day)													
Nitrite Nitrogen (mg/l & kg/day)													
Total Organic Nitrogen (mg/l & kg/day)													
Total Phosphate (mg/l & kg/day)													
Turbidity (Jackson Turbidity Units)													
pH (units)			2W				M		M	M			
Dissolved Oxygen (mg/l and % Saturation)			2W				M		M	M			
Temperature (°C)													
Apparent Color (color units)													
Secchi Disc (inches)													
Sulfides (if DO < 2.0 mg/l) Total & Dissolved (mg/l)			2W				M		M	M			
Arsenic <sup>(2)</sup> (mg/l & kg/day)				Y				Y					
Cadmium <sup>(2)</sup> (mg/l & kg/day)				Y				Y					
Chromium, Total <sup>(2)</sup> (mg/l & kg/day)				Y				Y					
Copper <sup>(2)</sup> (mg/l & kg/day)				Y				Y					
Cyanide <sup>(2)</sup> (mg/l & kg/day)				Y				Y					
Silver <sup>(2)</sup> (mg/l & kg/day)				Y				Y					
Lead <sup>(2)</sup> (mg/l & kg/day)				Y				Y					

TABLE 1 (continued)													
SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS													
Sampling Station	A-1		E-1 (5)			All 'G'	M-1		All 'P'	C-1 (5)	All 'L'	All 'R'	All 'O'
TYPE OF SAMPLE	C-4	Cont	G	C-8	Cont	O	G	C-4	G	G	O	O	O
Mercury (2) (mg/l & kg/day)				Y				Y					
Nickel (2) (mg/l & kg/day)				Y				Y					
Zinc (2) (mg/l & kg/day)				Y				Y					
Phenolic Compounds (2) (mg/l & kg/day)				Y				Y					
All Applicable Standard Observations									D (6)	M	W	W	E (8)
Bottom Sediment Analyses and Observations													
Total Ident. Chlor. Hydro- carbons (mg/l & kg/day)(2)				Y				Y					
Un-ionized Ammonia as N (mg/l) (3)				M					Q (7)	M			
River Flow (MGD)										W			
Volumetric Dilution Ratio (River to Effluent)			W										
Well Water Level (ft.)						D							

#### LEGEND FOR TABLE

##### TYPES OF SAMPLES

G = grab sample  
 C-24 = composite sample - 24-hour  
 C-X = composite sample - X hours  
 (used when discharge does not  
 continue for 24-hour period)  
 Cont = continuous sampling  
 DI = depth-integrated sample  
 BS = bottom sediment sample  
 O = observation

##### TYPES OF STATIONS

A = treatment facility influent stations  
 E = waste effluent stations  
 C = receiving water stations  
 R = treatment facilities perimeter stations  
 L = basin and/or pond levee stations  
 M = mound system effluent stations  
 G = mound system monitoring well stations  
 P = holding pond stations  
 O = overflow and bypasses

##### FREQUENCY OF SAMPLING

E = each occurrence  
 H = once each hour  
 D = once each day  
 W = once each week  
 M = once each month  
 Y = once each year

2/H = twice per hour  
 2/W = 2 days per week  
 5/W = 5 days per week  
 2/M = 2 days per month  
 2/y = once in March and  
 once in September  
 Q = quarterly, once in  
 March, June, September  
 and December

2H = every 2 hours  
 2D = every 2 days  
 2W = every 2 weeks  
 3M = every 3 months  
 Cont = continuous

#### FOOTNOTES FOR TABLE I

- (1) Each Oil and Grease sample shall consist of three grab samples taken at two-hour intervals during the sampling date, with each grab being collected in a glass container and analyzed separately. Results shall be expressed as a weighted average of the 3 values based upon the instantaneous flow rates occurring at the time of each grab sample collection.
- (2) Each of these constituents would be tested within the first year of normal discharge to the marsh. Constituent(s) showing a higher than normal concentration(s) or presenting a concern for potential problem would be required to be monitored subsequently at a frequency and duration to be determined by the Executive Officer.
- (3) At the effluent station (E station), unionized Ammonia as N shall be tested monthly during discharging periods only. At the P-3 station (pond No.3), unionized ammonium as N shall be analyzed quarterly (every three months) during non-discharging season when pond No.3 is being used to store treated wastewater. The testing at P-3 is not required if the water contained therein is strictly rainwater.
- (4) Either rainbow trout or fathead minnow shall be used as the test species for bioassay testing. Analyses shall be performed monthly during the discharging period. In addition, a pre-discharge analysis is required before the onset of each discharging season. Discharge to the marsh restoration project area shall not be started until analysis result has shown that the effluent as discharged is non-toxic.
- (5) Sampling of effluent (E station) and receiving water (C station) are not required during the non-discharging periods. All samplings and observations of the receiving water shall be performed during periods of high tide.
- (6) Daily surveillance of bird activity shall be performed during the period from August 1 through November 30 of each year for the prevention of the spreading of avian botulism. Notifications by phone shall be made to the Department of Fish and Game immediately after the observations of dead or diseased birds.
- (7) The testing is required only at P-3 station (in pond No.3).
- (8) During any day when bypassing occurs from any treatment phase(s) (primary, secondary, chlorination, etc.) in the plant, the monitoring program for the effluent shall include the following in addition to the above schedule for sampling, measurement and analyses:
  - a. When bypassing occurs from any primary or secondary treatment unit(s), composite sample for BOD, total suspended solids, oil and grease (influent and effluent), grab sample for settleable matter, and continuous monitoring of flow.

- b. When bypassing chlorination process, grab sample for coliform (total and fecal), and continuous monitoring of flow.

Under any of the above situations, daily receiving water sampling and observations shall begin until it is demonstrated that no adverse impact on the receiving water is detected.